

WHAT IS CLAIMED IS:

1. A keyboard musical instrument for generating tones, comprising:
a keyboard including plural keys used for specifying pitches of tones to be produced, applied with moments urging said plural keys to rest positions thereof and having respective bars,
each of said plural keys having at least one key balancer for applying a regulative moment to said each of said plural keys for varying the moment,
said at least one key balancer having a weight piece made of non-lead material and embedded in the bar of said each of said plural keys and an anchor for fixing said weight piece to said bar of said each of said plural keys;
and
a tone generating system connected to said plural keys, and generating said tones with said pitches.
2. The keyboard musical instrument as set forth in claim 1, in which said each of said plural keys is formed with a hole, and said at least one key balancer is received in said hole.
3. The keyboard musical instrument as set forth in claim 2, in which said anchor is constituted by plural pairs of outer surfaces of said weight piece for forming plural ridges, and said plural ridges bite an inner surface portion of said bar defining said hole so as to make said weight piece stable in said hole.

4. The keyboard musical instrument as set forth in claim 3, in which the outer surface of each of said plural pairs are asymmetrical with respect to the ridge therebetween so as to make said ridge sharp.

5. The keyboard musical instrument as set forth in claim 4, in which said at least one key balancer has a contour corresponding to a stack of frustums of cone so that a peripheral area of a bottom surface and a side surface of each frustum serve as said outer surface of said each of said plural pairs.

6. The keyboard musical instrument as set forth in claim 2, in which said anchor has plural teeth projecting from an outer surface of said weight piece, and said plural teeth bite an inner surface portion of said bar defining said hole so as to make said weight piece stable in said hole.

7. The keyboard musical instrument as set forth in claim 6, in which said plural teeth have a pyramid shape.

8. The keyboard musical instrument as set forth in claim 2, in which said anchor is constituted by two spiral surfaces of said weight piece for forming a spiral ridge, and said spiral ridge bites an inner surface portion of said bar defining said hole so as to make said weight piece stable in said hole.

9. The keyboard musical instrument as set forth in claim 2, in which said anchor is constituted by peripheral edges of polygonal disc portions of said weight piece, and said peripheral edges bite said inner surface portion of said bar defining said hole so as to make said weight piece stable in said hole.

10. The keyboard musical instrument as set forth in claim 2, in which said anchor includes a resilient tubular member inserted into said hole and outer surfaces of said weight piece forming a ridge, and said weight piece is snugly received in said hole so that said ridge presses a part of said resilient tubular member to an inner surface of said bar defining said hole.

11. The keyboard musical instrument as set forth in claim 10, in which said weight piece has a contour corresponding to a bulge.

12. The keyboard musical instrument as set forth in claim 1, in which at least one through-hole is formed in said bar, and said weight piece is fastened to said bar by means of said anchor.

13. The keyboard musical instrument as set forth in claim 12, in which said at least one through-hole has a narrow portion and wide portions continuous to both ends of said narrow portion and exposed to side surfaces of said bar, and said weight piece has a pair of weight sub-pieces each received in one of said wide portions and a part of said narrow portion so that said anchor fastens said weight sub-pieces to said bar.

14. The keyboard musical instrument as set forth in claim 13, in which said anchor is constituted by a bolt and a nut, and said bolt is engaged with said nut in through-holes formed in said weight sub-pieces, respectively.

15. The keyboard musical instrument as set forth in claim 13, in which said anchor is constituted by a bolt and a female screw formed in one of said weight sub-pieces.

16. The keyboard musical instrument as set forth in claim 14, in which said bolt is integral with one of said weight sub-pieces.

17. The keyboard musical instrument as set forth in claim 14, in which said nut is integral with one of said weight sub-pieces.

18. The keyboard musical instrument as set forth in claim 13, in which said anchor includes a projection formed with a ring extending around an outer surface thereof and a cylinder formed with a ring-shaped groove and slits, and said projection is received in an inner space of said cylinder so that said ring is received in said ring-shaped groove.

19. The keyboard musical instrument as set forth in claim 12, in which said at least one through-hole is increased in cross section from a certain point on the centerline thereof toward both ends, and said weight piece includes a pair of weight sub-pieces having respective cross sections increased in cross section so that said weight sub-pieces are received in said at least one through-hole.

20. The keyboard musical instrument as set forth in claim 1, in which at least one through-holes is formed in said bar, and said weight piece is caulked to said bar by means of said anchor.

21. The keyboard musical instrument as set forth in claim 20, in which said at least one through-hole has a narrow portion and wide portions continuous to both ends of said narrow portion and exposed to side surfaces of said bar, said weight piece has a tube member received in said at least one through-hole and a core member received in said tube member, and both end portions of said tube member is flared so as to be caulked to said bar.

22. The keyboard musical instrument as set forth in claim 21, in which said core member is fixed to said tube member by means of a pin.

23. The keyboard musical instrument as set forth in claim 21, in which said tube member is partially deformed so that said tube member is caulked to said core member.

24. The keyboard musical instrument as set forth in claim 20, in which said weight piece has plural parts spaced from one another by means of at least one slit, and said plural parts are expanded in said at least one through-hole so as to serve as said anchor.

25. The keyboard musical instrument as set forth in claim 20, in which said at least one through-hole has a narrow portion and wide portions diverged from both ends of said narrow portion and exposed to side surfaces of said bar, said weight piece has a tube member received in said at least one through-hole and a core member received in said tube member, and both end portions of said tube member is flared so as to be caulked in tight contact with said wide portions of said bar.

26. The keyboard musical instrument as set forth in claim 25, in which said weight piece further has a pin passing through said tube member and said core member so that said core member is secured to said tube member.

27. The keyboard musical instrument as set forth in claim 25, in which said weight piece has a rigid core portion and collar portions integral with said rigid core portion and projecting from both ends of said rigid core portion in opposites directions, respectively.

28. A process for fabricating a key incorporated in a keyboard musical instrument, comprising the steps of:

a) preparing a bar formed with a substantially straight through-hole and a weight piece having at least a substantially straight tube portion roughly equal in diameter to said substantially straight through-hole and a core portion disposed in said substantially straight tube portion;

b) inserting said weight piece into said substantially straight through-hole; and

c) caulking both ends of said substantially straight tube portion to said side portions of said bar so that both of said both end portions and said side portions are flared.

29. The process as set forth in claim 28, which said core portion has been secured to said substantially straight tube portion before said step a).

30. The process as set forth in claim 28, in which said core portion is merged into said substantially straight tube portion so that said core portion and said substantially straight tube portion are monolithic.